REMARKS

Responsive to the Office Action mailed October 29, 2003, Applicants have studied the Examiner's comments and the cited art. Claims 1-9, 11 and 12 were pending prior to this amendment; after this amendment, claims 1-9, and 11-13 remain pending. In view of the following remarks, Applicants respectfully submit that the application is in condition for allowance.

Amendments

Applicants have amended claim 1 to further clarify the function of the "means for ensuring" and to clarify the function of the "means for locking."

Applicants have further amended claims 7 and 8 to resolve an issue of antecedent basis discovered by Applicants during their review of the Application. The amendments do not change the scope of the claims.

Applicants have added new claim 13 to further clarify the function of the contact holder.

Claim Rejections Under 35 U.S.C. § 112

Claims 1-9, 11 and 12 are rejected under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse the rejections.

With respect to claim 1, the Office Action asserts "According to the specification the contact holder (30) locked not to the contact (15) but to the contact holder (4)."[1] Further, the Office Action asserts that "It is also unclear if the 'means ... for locking the contact holder' is the same as 'means for ensuring' (lines 8 and 10) or they are related to different mechanism. For purposes of examination it was assumed that these means are related to the same mechanism."[2] This mischaracterizes the claimed subject matter of claim 1.

Applicants have amended claim 1 to clarify the function of the "means for ensuring" and "means for locking," which are generally not the same mechanism, but different mechanisms. As described in the Specification, the contact pins 34 and female contacts 15 are only separated when the two sliding contact holders 4 and 30 are allowed to separate by the release of the lock balls 33 (i.e., the means ... for locking). The lock balls 33 can only release once the first and second contacts are separated (i.e., pins 12 are separated from contacts 14 and pins 36 are separated from contact 35).[3] Further, the specification describes the movement of the individual components that comprise each of the "means."[4] However, alternative arrangements to those described in reference to Figs. 1-15 can be envisaged, e.g., any two or more of the "means" could relate to identical components.

[1] Paper 12, p. 2.
[2] Paper 12, p. 2.
[3] *See, e.g.*, Specification, p. 6. second paragraph.
[4] Specification, p. 3-6.

Claim Rejections Under 35 U.S.C. § 102

Claims 1 and 5 are rejected under 35 U.S.C. § 102(b) as being anticipated by Bac, U.S. Patent No. 3,360,764. Applicants respectfully traverse the rejections.

Bac fails to disclose means for ensuring that on inter-engagement the contact holder is not displaced from the first position unless the third contact is interconnected with the contact of the other connector element. For example, as shown in Figs. 3 and 4, the lock ball 31 secures the sliding contact holder 30 against axial displacement until the female contacts 15 are pushed onto the mail contact pins 34.[5] No corresponding function is provided by the device of Bac. By way of example only, consider where an object, such as a piece of dirt, is introduced between the contacts 36 and 26 of the Bac device. The contact holder 15 may still be displaced from the first position to the second position (i.e., with contacts 25 mating with contacts 13.) In other words, Bac fails to recite means for ensuring that on inter-engagement the contact holder is not displaced from the first to second position unless the first contact is interconnected with a contact of either connector element.

Further, Bac fails to recite means for ensuring that on disengagement the first and second contacts separate before the third contact is separated from the said contact of the other connector element. Bac also fails to teach or suggest means being provided for locking the third contact of the contact holder to the said contact of the other connector element unless the first and second contacts are separated. Rather, Bac indicates that "when it is required to disconnect the parts A and B, the quick release means are operated and ... the body 28 is in turn rejected violently towards the rear by the spring 42 which effects the respective disconnection of pins 2 and the female parts 13 on the one hand, and of the pins 36 and female parts 26 on the other hand, as well as the complete separation of the parts A and B."[6]

In other words, no discrete disconnection sequence of the contacts is described by Bac. Further, Bac indicates that the body 28 is projected "violently" towards the rear. Consequently, it is fully possible that the contacts will not be disconnected in the order of Applicants' claimed subject matter, and no means are provided for ensuring that this disconnection occurs in the claimed sequence. The disconnection sequence will instead occur based upon the relative strengths of the springs, and the strength of the relative connections between the pins 25 and female parts 13 and the pins 36 and female parts 26.

Additionally, Bac fails to recite any means for locking the third contact of the contact holder to the said contact of the other connector element unless the first and second contacts are separated. Bac simply describes a means for locking the reciprocal parts A and B in the general sense.[7] Bac fails to describe any locking means in which a contact of the contact holder is locked to the contact of the other connector element, as per claim 1.

The Office Action notes the locking balls 140 and 161, and associated collar 116, body 128 and socket 137. However, these elements do not provide the same function as the means for locking of Applicants' claimed subject matter. Nor do they ensure the reverse

[5] Figs. 3-4; Specification, p. 5, first paragraph.
[6] Col. 6, lines 49-59.
[7] Col. 7, lines 12-20.

order of disengagement. Bac clearly indicates that the balls 161 move in the slots 160, and balls 140 into the groove 141,[8] prior to the electrical connecting parts (e.g., 136, 124, 125, and 113) penetrating into one another during connection.[9] Thus, the parts of the Bac device noted by the Office Action do not control the order of disengagement of the contacts. Further, no means is provided for locking the third contact to the contact holder to the said contact of the other connector element unless the first and second contacts are separated. By way of example only, consider the instance in which, in the device of Bac, the pins 25 (or 125) become fused with the female contacts 13 (or 113). Nothing is provided in the disclosure of Bac to ensure that the pins 25 (or 125) do not become disconnected from the female contacts 26 (or 124). In other words, no means is provided for locking the third contact of the contact holder of the said contact of the other connector element unless the first and second contacts are separated.

The Bac device, assuming the contacts are fused as described above, could potentially lead to an explosion if a spark occurs on the disconnection of the live electrical contacts 26 from the contacts 36. In direct contrast, Applicants' claimed subject matter, by providing the means for locking as recited in claim 1, ensures that such a dangerous situation cannot arise.

Not only does Bac fail to recite a means for ensuring either the engagement sequence or the disengagement sequence, Bac also fails to disclose the means for locking recited by claim 1. Further, no hint is provided by Bac of the advantages of having such an engagement sequence, a disengagement sequence or means for locking. Consequently, claim 1 is not anticipated by Bac, nor is it obvious over Bac. For these reasons, Applicants respectfully request withdrawal of the rejections.

Claim Rejections Under 35 U.S.C. § 103

Claims 2-4, 6-8, 11 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bac, U.S. Patent No. 3,360,764. Applicants respectfully traverse the rejections.

Claims 2-4, 6-8, 11, and 12 depend from allowable claim 1 and are therefore also allowable. For at least this reason, Applicants respectfully request withdrawal of the rejections.

Additionally, the device of Bac is directed at providing a releasable electrical connector permitting abrupt release of electrical components. No motivation is provided for one skilled in the art to modify the disclosure of Bac in any way to provide a device that is available for use in an explosive atmosphere, as per the dependent claims. For these additional reasons, Applicants respectfully request withdrawal of the rejections.

New Claim 13

Applicants have added new claim 13 to further clarify the function of the contact holder. Claim 13 depends from allowable claim 1 and is therefore also allowable. For at

[8] Col. 8, lines 12-31.
[9] Col. 8, lines 27-28.

least this reason, Applicants respectfully submit that claim 13 recites allowable subject matter.

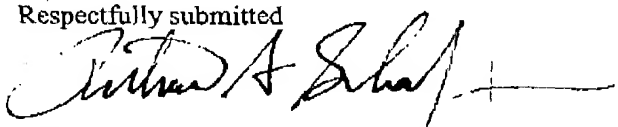
Additionally, the contact holder is locked into the first position by the lock ball 31 until the contacts 15 are pushed onto the contact pins 34.[10] For these additional reasons, Applicants respectfully submit that claim 13 recites allowable subject matter.

CONCLUSION

Applicants respectfully submit that all issues and rejections have been adequately addressed, that all claims are allowable, and that the case should be advanced to issuance.

If the Examiner has any questions or wishes to discuss the claims, Applicants encourage the Examiner to call the undersigned at the telephone number indicated below.

Respectfully submitted



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[10] *See. e.g.*, Specification, p. 5, first paragraph.